

*Oliver*

ACIC REFERENCE PUBLICATION NO. 25

# WORLD RELATIVE GRAVITY REFERENCE NETWORK

AUGUST, 1970



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United States Air Force  
Aeronautical Chart and Information Center  
St. Louis, Missouri 63118

DEPARTMENT OF THE AIR FORCE  
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SECOND AND ARSENAL, ST LOUIS, MISSOURI 63118



13 MAY 1971

US Geological Survey  
Menlo Park, Calif  
ATTN: Mr Howard Oliver

Dear Howard

We have recently published the first two parts of ACIC Reference Publication No 25, World Relative Gravity Reference Network. I am furnishing you the enclosed copies for your retention in hope that they will be of help to you in your work.

I would appreciate any comments you might wish to make regarding the contents or format.

The remaining sections of this catalog will be sent to you as they are completed.

Sincerely

A handwritten signature in cursive script, appearing to read "Elmer J. Hauer", is written over the typed name.

ELMER J. HAUER  
Chief, DOD Gravity  
Services Branch

2 Atch

1. RP 25, North America,  
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Enclosed for your retention is a new Table of Contents for the copies of ACIC Reference Publication No 25, "World Relative Gravity Reference Network" previously forwarded to you. Also enclosed is one copy of the third part of RP 25, covering Asia, Australia, and the Pacific Ocean.

**ELMER J. HAUER**  
 Chief, DOD Gravity  
 Services Branch

<b>TO:</b> Mr Howard Oliver United States Geological Survey Regional Geophysics Branch 345 Middlefield Road Menlo Park, California 94025	INTERNAL ROUTING	TO	DATE	TO	DATE
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Attached for your retention is one copy of the fourth part of ACIC Reference Publication No 25 covering Africa.

*Elmer J. Hauer*

ELMER J. HAUER  
 Chief, DOD Gravity  
 Services Branch

<b>TO:</b> United States Geological Survey ATTN: Mr Howard Oliver 345 Middlefield Rd Menlo Park, CA 94025	INTERNAL ROUTING	<b>TO</b>	<b>DATE</b>	<b>TO</b>	<b>DATE</b>
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Attached for your retention is one copy of the fourth part of ACIC Reference Publication No 25 covering Africa.

ELMER J. HAUER  
 Chief, DOD Gravity  
 Services Branch

<b>TO:</b> United States Geological Survey ATTN: Mr Howard Oliver 345 Middlefield Rd Menlo Park, CA 94025	INTERNAL ROUTING	TO	DATE	TO	DATE
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Enclosed is one set of revisions for ACIC RP 25, "World Relative Gravity Network", North American volume. This set should be used to update the copy of RP 25 previously forwarded to your office.

*Elmer J. Hauer*  
ELMER J. HAUER  
Chief, DOD Gravity  
Services Branch

5/31 — *Stone, Please handle* *SHO*  
*Suggest check out drops for car boxes in Calif.*

TO: United States Geological Survey ATTN: Mr Howard Oliver 345 Middlefield Road Menlo Park, CA 94025	INTERNAL ROUTING	TO	DATE	TO	DATE
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Enclosed is one copy of the final volume of ACIC RP No. 25 covering the West Indies, Central America, South America, Antarctica, and the Atlantic Ocean. Any future volumes, updates, or revisions will be forwarded to you if and when they are published.

*Elmer J. Hauer*

ELMER J. HAUER  
Chief, DOD Gravity  
Services Division

TO:	United States Geological Survey ATTN: Mr Howard Oliver 345 Middlefield Road Menlo Park, Ca 94025	INTERNAL ROUTING	TO	DATE	TO	DATE
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WORLD RELATIVE GRAVITY  
REFERENCE NETWORK

AUGUST 1970

United States Air Force  
Aeronautical Chart and Information Center  
St. Louis, Missouri 63118

1



REVISIONS TO ACIC RP 25

"WORLD RELATIVE GRAVITY NETWORK"  
NORTH AMERICAN VOLUME  
May 1972

1. Attached are changes for the North American part of ACIC RP 25 previously forwarded to your office.

2. The new pages are in the same order as the bound volume. Base stations are in numerical order within each section.

3. 470 new stations have been added, and 45 stations revised in the United States (Conterminous) and Mexico. The following stations have been deleted:

✓0112-1	Jackson, Miss.	✓0492-1	Salina, Utah
✓0293-1	Doyle Well, Kan.	✓0561-1	Austin, Minn.
✓0359-1	Neodesha, Kan.	✓0774-1	Texarkana, Ark.
✓0384-1	Lawrence, Kan.	✓0880-1	White Sands, N.M.
✓0445-1	Midland, Texas	✓2038-1	Milford, Utah
✓0465-1	Kent, Texas	✓2361-1	Springville, Utah

4. A number of the old stations have been reprinted so that when the new and revised sites are added to the existing sections, the number sequence will be maintained.

WORLD RELATIVE GRAVITY REFERENCE NETWORK

August 1970

Prepared by  
Helen M. Jablonski  
Evaluation Section  
DoD Gravity Services Branch  
Chart Research Division

Aeronautical Chart and Information Center  
Second and Arsenal Streets  
St. Louis, Missouri 63118

## PREFACE

GENERAL: This Reference Publication is one of a series of publications on technical achievements in the fields of Mapping, Charting, and Geodesy or related arts and sciences. Each such publication is prepared by an ACIC technician best qualified by training and experience to address the subject.


PURPOSE: This publication is issued to disseminate timely, useful technical information concerning Gravity Base Stations.

SCOPE: One of the basic problems of gravimetry is the standardization of available data on a world-wide basis. To assist geodesists in the field, ACIC has collected the various networks and base station data and adjusted them to a homogeneous datum and scale. To enable observers to recover these stations, descriptions and/or sketches are presented in addition to the adopted gravity values.

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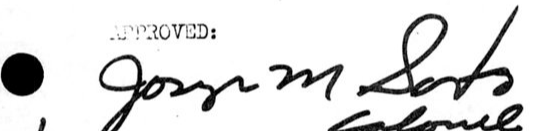
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22151, approved.

  
GERALD H. JOHNSON  
Chief, Chart Research Division

REVIEWED:

  
THOMAS C. FINNIE  
Technical Director

APPROVED:

  
EDWIN L. STERLING, Colonel, USAF  
Commander

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B. Abbreviations

#### ABSTRACT

One of the basic problems of gravimetry is the standardization of available data on a world-wide basis. To assist geodesists in the field, ACIC has collected the various networks and base station data and adjusted them to a homogeneous datum and scale. To enable observers to recover these stations, descriptions and/or sketches are presented in addition to the adopted gravity values.

## WORLD RELATIVE GRAVITY REFERENCE NETWORK

### 1. World-Wide Network

#### 1.1 Introduction

The DoD Gravity Library, in its role as the Department of Defense depository for world-wide gravity information, has on file values for approximately 2,700,000 unique gravity stations. Each year, relative measurements, in excess of a quarter million stations are made throughout the world. However, in order to make optimum use of this data it must be adjusted to a common reference system.

A uniform world-wide gravity system is being accomplished by the solution of three closely interrelated problems: 1) the World Calibration Standard, 2) the First-Order World Gravity Net (FOWGN), and 3) the International Absolute Reference or gravity datum. Giant strides have been made towards this end, however final solutions are not expected until mid 1970.

Meanwhile, a need existed for a uniform world gravity system to which all gravity data in the DoD Gravity Library could be adjusted. A uniform system would render these holdings more usable to geodesists and geophysicists in the field and provide a base to which new measurements could be referenced. The system adopted would be considered a provisional or interim system until a world reference system has been officially adopted by the International Union of Geodesy and Geophysics (IUGG).

## 1.2 Objectives and Results

While awaiting the final adjustments of the FOWGN, the DoD Gravity Services Branch of ACIC, has collected all available base stations and various networks and has provisionally unified this collection. This interim adjustment has been adopted by ACIC for the relative world gravity network to which all national networks and local surveys are being tied. This provides a world-wide system of gravity bases with values on a single scale for use in evaluating pendulum and gravimeter measurements made by the numerous agencies, and serves as a basis for reducing all the DoD Gravity Library holdings to a single uniform datum.

To document this work and assist geodesists and geophysicists in the field, a catalogue of base stations in the ACIC's adopted system is being presented here. A representative selection, based on reliability and distribution, has been made of the sites in the Base Station File maintained by the DoD Gravity Services Branch. The catalogue will be published in sections, by areas (i.e. North America, Europe, Africa, etc.), as the work is completed. Authorized users may obtain alternate or additional sites, where available, from the DoD Gravity Library on request.

## 1.3 Maintenance

The published sections will periodically be up-dated as new and pertinent information is obtained and processed. It is therefore requested that if any site presented in the catalogue is inaccessible or unrecoverable, the fact should be made known



to this office as well as any corrections to the descriptive information.

#### 1.4 Users Information

All sketches are oriented North unless otherwise indicated. Reference code numbers used by the various surveying agencies and organizations are furnished for easier identification.

The Gravity Base Stations are arranged in numerical order by country or geographic area. An index graphic(s) will precede each group to indicate location and distribution of sites.

APPENDIX A.1  
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# APPENDIX B

## ABBREVIATION LIST

ACIC	AERONAUTICAL CHART AND INFORMATION CENTER
AFCRL	AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
APCS	AIR PHOTOGRAPHIC AND CHARTING SERVICE
B	BUREAU OF MINERAL RESOURCES (AUSTRALIA)
C	CHAPMAN - CALIFORNIA DIVISION OF MINES AND GEOLOGY
CGI	COMMISSIONE GEODETICA ITALIANA, ROMA
D	DEUTSCHE SCHWERE ARKIV
DGFI	DEUTSCHES GEODATISCHES FORSCHUNGS INSTITUT
DO	DOMINION OBSERVATORY, CANADA
DSIR	DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH, WELLINGTON (NEW ZEALAND)
EACL	EURO-AFRICAN CALIBRATION LINE
EASCL	EURO-AFRICAN SECONDARY CALIBRATION LINE
ECL	EUROPEAN CALIBRATION LINE
FCL	FRENCH CALIBRATION LINE
FGI	FINNISCHES GEODATISCHES INSTITUT, HELSINKI
FOWGN	FIRST ORDER WORLD GRAVITY NET
GITH	GEODATISCHES INSTITUT DER TECHNISCHEN HOCHSCHULE, HANNOVER
GSI	GEOGRAPHICAL SURVEY INSTITUTE, TOKYO
GW	WOOLLARD PENDULUM SITE (UNIV OF WISCONSIN)
IA	IOWA GEOLOGICAL SURVEY
IAG	INTERNATIONAL ASSOCIATION OF GEODESY (ASSOCIATION INTERNATIONALE DE GEODESIE)
IAGS	INTER AMERICAN GEODETIC SERVICE
IFN	ITALIAN FUNDAMENTAL NET
IGB	INTERNATIONAL GRAVITY BUREAU (I.U.G.G.) (BUREAU GRAVIMETRIQUE INTERNATIONALE)
IGC	INTERNATIONAL GRAVITY COMMISSION (COMMISSIONE GRAVIMETRIQUE INTERNATIONALE)
IGS	INSTITUTE OF GEOLOGICAL SCIENCES, LONDON
NACL	NORTH AMERICAN CALIBRATION LINE
NGU	NORGES GEOGRAFISKE OPHMALING, OSLO
NMO	U.S. NAVAL OCEANOGRAPHIC OFFICE
OGS	OSSERVATORIO GEOFISICO SPERIMENTALE, TRIESTE
ORSTOM	OFFICE DE LA RECHERCHE SCIENTIFIQUE ET TECHNIQUE OUTREMER, PARIS
SI	SURVEY OF INDIA
U	U.S. COAST AND GEODETIC SURVEY
UNAM	UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO
WA	WOOLLARD AIRPORT SITE (UNIV OF WISCONSIN)
WH	WOOLLARD HARBOR SITE (UNIV OF WISCONSIN)
WHOI	WOODS HOLE OCEANOGRAPHIC INSTITUTE
WU	WOOLLARD UNIVERSITY SITE (UNIV OF WISCONSIN)

Unclassified

Security Classification

## DOCUMENT CONTROL DATA - R &amp; D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author) Aeronautical Chart and Information Center Chart Research Division St. Louis, Missouri 63118		2a. REPORT SECURITY CLASSIFICATION Unclassified	
		2b. GROUP	
3. REPORT TITLE  World Relative Gravity Reference Network			
4. DESCRIPTIVE NOTES (Type of report and inclusive dates) Reference Publication			
5. AUTHOR(S) (First name, middle initial, last name)  Helen M. Jablonski			
6. REPORT DATE October 1969		7a. TOTAL NO. OF PAGES 517	7b. NO. OF REFS 63
8a. CONTRACT OR GRANT NO.		9a. ORIGINATOR'S REPORT NUMBER(S) ACIC Reference Publication No. 25	
b. PROJECT NO.		9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
c.			
d.			
10. DISTRIBUTION STATEMENT  Distribution of this Document is Unlimited			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY Aeronautical Chart and Information Center Chart Research Division St. Louis, Missouri 63118	
13. ABSTRACT  One of the basic problems of gravimetry is the standardization of available data on a world-wide basis. To assist geodesists in the field, ACIC has collected the various networks and base station data and adjusted them to a homogeneous datum and scale. To enable observers to recover these stations, descriptions and/or sketches are presented in addition to the adopted gravity values.			

Unclassified

Security Classification

14.	KEY WORDS	LINK A		LINK B		LINK C	
		ROLE	WT	ROLE	WT	ROLE	WT
	gravity base stations						

Unclassified

Security Classification